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ABSTRACT

An interdisciplinary, team-taught, modularized series of courses was designed and implemented at Teachers College of the University of Nebraska-Lincoln to teach educational research methodology to graduate students. The course is composed of seven one-semester-hour modules. All doctoral students are required to take Foundations of Research (an introductory course) and three additional modules. The other six modules are: (1) Experimental Designs in Research; (2) Correlation and Ex Post Facto Research; (3) Applied Behavioral Analysis Research; (4) Historical and Content Analysis Research; (5) Questionnaire, Survey Research; and (6) Naturalistic Observation Research. Early evaluation of the research modules, from both a content and administrative perspective, has been highly positive. (BW)

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AN INTERDISCIPLINARY MODULAR APPROACH TO TEACHING EDUCATIONAL RESEARCH

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AN INTERDISCIPLINARY MODULAR APPROACH TO TEACHING EDUCATIONAL RESEARCH

In response to the need identified by educational researchers and students in educational programs, Teachers College of the University of Nebraska-Lincoln (UN-L) designed and implemented a unique approach to teaching educational research methodology to graduate students. An interdisciplinary, team taught, modularized series of courses was conceived which provide students with sufficient breadth and depth to meet their needs whether they intend to become consumers or producers of research. The interdisciplinary approach and team teaching expose students to a rich variety of approaches to educational research whereby students can see how different researchers approach the same problems. In addition, the modular components permit students to select modules appropriate for their current needs and abilities. Flexibility is also maintained by rotation of the schedule for offering the modules. This feature allows for availability of the modules to traditional and non-traditional graduate students. Therefore, the content and format of the course provides opportunities for pursuit of individual special interests as well as ensure a comprehensive foundation of essential research competencies.

Rationale

The new course is an outgrowth of two major debates regarding educational research which have been raging the past decade or so. Both have implications for graduate education. The first debate centers on the source of research problems and the setting in which educational research is conducted. It might be characterized as the "Filter down or trickle up debate." Schwab (1969) suggested that educational research needs to be more practical and focus on the resolution of specific problems in field settings. Kerlinger (1973), on the other hand, posits strong arguments for more theoretical research, suggesting

that every practical problem has a theoretical base. Others note the tremendous gap between educational research and educational practice and suggests the classroom setting should be the focal point for research rather than the experimental laboratory (Kratwohl, 1974). At one extreme, some are saying theoretical research is an end in itself and may as a by-product have implications for practice ("filter-down theory"). Others suggest practical problems in field settings should be the source of research efforts ("trickle-up").

A second influencing debate, which runs parallel to the first regarding research problem source and site of the research, concerns the growing interest in alternative research strategies. Recently, there has been increasing criticism of the experimental approach, which has been portrayed as the "dominant paradigm" (Kuhn, 1970; Patton, 1978; Rist, 1977). The experimental approach often demands strict control of instructional approaches and a microscopic focus on precise learning outcomes. Because of this the researcher needs to manipulate who is exposed and not exposed to the instruction. Critics view this research methodology as impractical in school settings and often see little practical utility in the findings. Alternative research paradigms suggested include: (1) anthropological approaches (Wilson, 1977; Lutz & Ramsey, 1974); (2) applied behavioral science or single subject approaches (Kratochwill, 1978); and (3) appropriate quasi-experimental designs (Cook & Campbell, 1979).

As yet, these debates have not had a great deal of impact on educational research or research curricula. Through a ten-year period (1968-1977) 35% of the research studies in the American Educational Research Journal were experimental, 9% quasi-experimental, 56% correlational, and 3% surveys (Luce & Johnson, 1980). There were no categories for naturalistic or single-subject research; these types of research are often reported in journals read by neither the producer or consumer of educational research.

COURSE DEVELOPMENT

Formerly in Teachers College at UN-L, instruction in research methodology was offered in classes through four different departments. The content for the classes was not identical but there was enough overlap to have this situation recognized as a problem. Since there was some duplication among research offerings a research advisory committee recommended pooling available resources and developing one graduate level course in research methodology. Faculty members appointed to work on this task represented the various departments which were offering research related courses in the college. The departments included Educational Psychology and Measurements, Elementary Education, Educational Administration, and Health, Physical Education, and Recreation.

This committee sought to design a course which would effectively use the best resources from all departments within Teachers College and offer considerable flexibility of instruction to the large variety of traditional and non-traditional students who pursue graduate programs in Teachers College at UN-L. The goal was to develop a course sequence which would expose students to a broad array of research methodologies but with opportunities to obtain sufficient depth in at least one methodology.

After two years of deliberation, the committee recommended a modular approach to teaching educational research methodology. In addition, they suggested that an interdisciplinary team assume the major responsibility for teaching the different research approaches. A modular approach to teaching appeared to be the best model for providing the desired breadth and depth, also enable flexible scheduling. And, by having an interdisciplinary group teach the modules, the committee believed students would benefit by exposure to different faculty as well as to different teaching methodologies.

The course is composed of seven one-semester-hour modules. All doctoral students in Teachers College are required to complete four of the seven. One of

the modules, Foundations of Research, is required of all students. In this module, students become familiar with the importance of research, its relevance and uses. In addition, students also learn how to select a problem, identify variables, state hypotheses, review the literature, and write a research report. One class period of the module is devoted to having all seven members of the team responsible for teaching the various modules provide an overview of the different research methodologies available in the course.

After students are provided an overview of the different methodologies they make a decision regarding which three (or more) of six additional modules they will enroll. Guidance is provided to ensure that they will receive some breadth of knowledge in research. The six additional modules from which they may select are divided into two categories. The content of these modules represents nearly all of the essential topics of a research course which were recommended by Gay (1979).

Category A Modules	Category B Modules
1. Experimental Designs in Research	1. Historical and Content Analysis Research
2. Correlation and Ex Post Facto Research	2. Questionnaire, Survey Research
3. Applied Behavioral Analysis Research	3. Naturalistic Observation Research

Students are required to choose a minimum of one module from each of the categories.

All research modules are taught three times each year. Three different approaches to scheduling were developed to meet the needs of the traditional and non-traditional students who enroll in the class. The schedules are coordinated in such a fashion that it is possible for a student to complete all modules in one semester or one summer.

Descriptions of Course Modules

Foundations of Research

This module examines the philosophical issues involved in selecting research strategies. Readings and lectures focus on the procedures necessary for planning research, conducting a literature review, protecting human subjects, collecting and processing data, and writing the report. The module provides a description of the focus and orientations of the variety of research approaches with an emphasis on the optional modules available to the student. The instructor discusses key concepts related to sampling procedures as well as practices in developing research hypotheses.

Experimental Designs in Research

This module establishes conceptual framework for the philosophical basis and assumptions of experimental research. Students examine the major sources of internal and external invalidity for a variety of experimental designs. They also discuss selected quasi-experimental designs. The instructor presents data analysis procedures for each of the designs in a framework which focuses on variability, relationships among variables, and generalizability. Students critique a published research paper at the end of the class.

Correlational and Ex Post Facto Research

This module examines the causal-comparative (ex post facto) and correlations approaches to research. Students learn about the advantages and disadvantages, statistical procedures, and the common mistakes for each approach. The instructor indicates when these approaches are appropriate and how, for example, they can assist decision-making in predictive contexts.

Applied Behavioral Analysis Research

This module examines time series studies within the operant (behavioral) framework. The instructor demonstrates experimental control by changes in frequency or rate of the behaviors observed which coincide with changes introduced in the setting. Students discuss methods of assessing change and monitoring it.

Questionnaire, Survey, and Interview Research

Student in this module develop (1) an understanding of the purpose and intent of survey research and a knowledge of different types of surveys, (2) an awareness of the uses, advantages and disadvantages of surveys and interviews, (3) a knowledge of questionnaire development and administration and sample selection, and (4) a knowledge of coding survey data.

Historical and Content Analysis Research

This module focuses on techniques for determining accuracy and reliability of historical documents. The instructor discusses procedures for analyzing and interpreting the content of sources.

Naturalistic Observation Research

This module introduces the main assumptions and research concepts associated with naturalistic inquiry. Students also consider the relationship to the logic of research. In addition, the instructor presents techniques for data collection.

Evaluation of Course

Two aspects of the interdisciplinary modular approach to educational research were evaluated after teaching the course for one semester. The first

or local students expressed preference for the fall schedule where each module met a total of eight times in a four-week period. In the spring schedule, each module met approximately three hours once a week for four weeks. Many students as well as instructors believed the classes were excessively long for presenting material. For non-local students, however, holding the classes on only one day a week for an extended class session provided an efficient and economically sound approach to course scheduling. Modules were also available during the summer, each offered in intense two week periods, meeting daily for 1½ hours. Under this scheduling arrangement, students could complete the four hour module series in one five-week summer session. Current plans are to retain the fall, spring and summer schedules as they stand at least through the 1980-81 academic year and summer, 1981. A re-evaluation of scheduling will be undertaken in summer, 1981.

Faculty compensation. Faculty compensation, or adjustment of the cooperating professors' workloads to reflect participation in the modules, has been problematic. Because the set of research courses are Teachers College courses rather than offered under the auspices of a single department, professors for the research modules come from several departments within the college. Originally, adjustment for the one-hour commitment of teaching a research module was to be negotiated between professors and their respective department chairs. This procedure yielded inconsistent compensation across departments. Therefore, a new plan to compensate faculty by a three-hour course reduction upon the completion of teaching three one-hour modules was adopted. This equitable plan for load compensation has enabled more faculty to be included in the module instructors pool which now provides a variety of research perspectives for the students.

The results of the evaluation for both module content and administration must be viewed in light of their unique approach and recency of implementation. Some of the positive student comments may simply be a reaction to the new and fresh approach to research that may fade or attenuate as the course becomes an

accepted regular part of the curriculum. Likewise, the enthusiasm of the professors who teach the modules may diminish with time. However, it is hoped and expected that, due to the sound conceptual bases upon which the modules have been developed and implemented into the curriculum, the quality and quantity of praise and acceptance will continue as the courses mature and develop.

On the other hand, it is equally surprising that a new approach would be universally well received at such an early state of existence. Scheduling problems, grading inconsistencies, module work requirement differentials could have contributed to a depressed early evaluation. This did not happen.

Conclusion

Teachers College at University of Nebraska-Lincoln has attempted to devise, create, and implement a new approach to teaching educational research methodology to doctoral level students. The plan was conceived and structured using sound theoretical bases which facilitated implementation. Scheduling was purposefully made flexible to meet the needs of traditional and non-traditional students. The research course has been adopted as a requirement for all doctoral students in Teachers College, regardless of departmental affiliation.

Early evaluation of the research modules, from both a content and administrative perspective, has been highly positive. Few changes are planned based on the evaluation results. A re-evaluation is scheduled for summer, 1981.

Success of the research course depended upon several things: administrative support, cooperative faculty, strong and sound planning, enthusiastic instructors, and interested students. Because the factors involved in module success were present at the University of Nebraska, early positive reaction was realized. In order for the modular approach to the research course to remain an important and contributing element of the graduate program of Teachers College, the same elements are required.

NOTE

1. Scheduling plans are available upon request from the first author.

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